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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/597,518	07/27/2006	Kentaro Nakahara	NEC 04P315	2255

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EXAMINER	
HAN, KWANG S	
ART UNIT	PAPER NUMBER
1727	

NOTIFICATION DATE	DELIVERY MODE
04/26/2012	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/597,518	NAKAHARA ET AL.	
	Examiner	Art Unit	
	Kwang Han	1727	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 January 2012*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

5)☒ Claim(s) *1-10* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1-10* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

12)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

POWER STORAGE DEVICE

Examiner: K. Han SN: 10/597,518 Art Unit: 1727 April 23, 2012

Detailed Action

1. The Applicant's amendment filed on January 27, 2012 was received. Claims 1-6 were amended. Claims 7-10 were added.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 112

3. The claim rejections under 35 U.S.C. 112, first paragraph, on claims 1-6 are withdrawn, because of Applicant's arguments and review of the instant specification.

4. The claim rejections under 35 U.S.C. 112, second paragraph, on claims 1-6 are withdrawn, because the claims 1 and 3 have been amended.

5. Claim 7 recites the limitation "wherein a content of electro-conductivity imparting material" in lines 1 and 2 of the claim. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

6. Claims 1 and 3-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Nakahara et al. (JP 2002-304996, machine translation).

Regarding claims 1, 8, and 9, Nakahara is directed towards a secondary electrochemical storage device (secondary electrochemical cell) [0008-0014] comprising a nitroxyl polymer which has a nitroxyl cation partial structure and a nitroxyl radical partial structure [Abstract, 0008-0009] in a cathode with a cathode pole collector [0046]. Nakahara further discloses using lithium as the anode active material [0045] and the use of a solid polymer electrolyte including a electrolysis solution (solvent) and electrolyte salt [0048] made into a gel without the use of a separator (the cathode in direct contact with the anode) [0050].

Regarding claims 3 and 4, Nakahara discloses the collector to be comprised of various materials including a carbon raw material and aluminum plate [0046].

Regarding claim 5, Nakahara discloses the cyclic nitroxyl structure [0010].

Regarding claim 6, Nakahara discloses the nitroxyl polymer compound having a side chain containing a residue which removes at least one hydrogen atom bonded to an element forming at least one cyclic nitroxyl structure [0017-0022].

Regarding claim 7, Nakahara discloses the nitroxyl polymer to comprise 50 wt% or more of the electrode provided with outer constituents such as carbon materials [0036-0037].

Regarding claim 10, Nakahara discloses the cell to be a coin type cell (Drawing 1).

Claim Rejections - 35 USC § 103

7. Claim 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakahara et al. as applied to claim 1 above and further in view of McManis et al. (US 4632889) is maintained.

The teachings of Nakahara as discussed above are herein incorporated.

Regarding claim 2, Nakahara is silent towards the use of a lithium-tin alloy or lithium-silicon alloy as the anode active material.

McManis teaches a lithium alloy composite for battery applications including lithium-aluminum and lithium-silicon alloys for the benefit of forming an anode which discharges at high rates in a variety of electrolytes (1:44-57). It would have been obvious to one of ordinary skill in the art at the time of the invention to use an anode including active materials comprised of lithium-silicon alloy because McManis teaches it forms an anode for a battery with high discharge rates in a variety of electrolytes.

8. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakahara et al. as applied to claim 1 above and further in view of Inoue et al. (US 6090506).

Regarding claim 3, Nakahara discloses the collector to be comprised of various materials including a carbon raw material and aluminum [0046].

Inoue teaches a current collector for a battery composed of materials which undergo no chemical change within the battery including aluminum with carbon treated on the surface (13:32-39). It would have been obvious to one of ordinary skill in the art at the time of the invention to use a current collector for a battery comprised of

aluminum with carbon because Inoue teaches these materials undergo no chemical change within the battery and is electrically conductive.

9. Claim 3 and 4 are also rejected under 35 U.S.C. 103(a) as being unpatentable over Nakahara et al. as applied to claim 1 above and further in view of Farahmandi et al. (US 5777428).

Regarding claims 3 and 4, Nakahara discloses the collector to be comprised of various materials including a carbon raw material and aluminum [0046].

Farahmandi teaches a capacitor having an aluminum impregnated with carbon electrode (including carbon paper; 5:51-52) to form a composite electrode attached to the current collector plate to form a high performance double layer capacitor (5:50-58-6:25-45). It would have been obvious to one of ordinary skill in the art at the time of the invention to use an aluminum electrode impregnated with carbon in Nakahara's electric storage device because Farahmandi teaches it provides for a bipolar type double layer capacitor that can deliver large amounts of useful energy at a very high power output and power density rating (5:21-24).

10. Claim 3 and 4 are also rejected under 35 U.S.C. 103(a) as being unpatentable over Nakahara et al. as applied to claim 1 above and further in view of Nanjundiah et al. (US 6627252).

Regarding claims 3 and 4, Nakahara discloses the collector to be comprised of various materials including a carbon raw material and aluminum [0046].

Nanjundiah teaches an electrode structure for a capacitor which is provided with a collector plate (108, 112) comprising aluminum foil with a primary coating of carbon powder film in contact with the collector plate (4:14-28) before applying the secondary electrode coating because this structure provides lower resistance (4:41-44; 6:55-63). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the collector of Nakahara to coated with a primary layer of carbon powder film on a aluminum foil layer because Nanjundiah teaches an electrode storage device provided with a collector having a primary layer of carbon powder provides for lower resistance in the final electrode structure.

Response to Arguments

11. Applicant's arguments filed January 27, 2012 have been fully considered but they are not persuasive.

Applicant's principal arguments are:

(a) None of the prior art references teaches or suggests the nitroxyl polymer of the cathode is in direct contact with the anode

In response to Applicant's arguments, please consider the following comments:

(a) Applicant's specification as shown in paragraph 0042 and examples 1-7 [0052-0060] of the PGPub (US 2008/0213669) and newly added claim 9, the cathode of the present invention is provided with a polymer electrolyte which allows the contact between the cathode and anode to form the power storage device. The prior art of

reference of Nakahara clearly anticipates this by also providing a polymer electrolyte which provides for the direct contact between the cathode and the anode without the presence of a specified separator as was argued in the rejection above.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact/Correspondence Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kwang Han whose telephone number is (571) 270-5264. The examiner can normally be reached on Monday through Friday 8:00am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Barbara Gilliam can be reached on (571) 272-1330. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/K. H./
Examiner, Art Unit 1727

/Barbara L. Gilliam/
Supervisory Patent Examiner, Art Unit 1727